

REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 15-27 are presently active in this case. The present Amendment cancels Claims 1-14 without prejudice or disclaimer; and adds new Claims 15-27 without introducing any new matter.

The outstanding Office Action objected to Claims 7-14 as being in improper multiple-dependent form. Claims 1-2, and 6 were rejected under 35 U.S.C. § 102(e) as anticipated by Takano (U.S. Patent No. 6,985,666). Claims 3-5 were rejected under 35 U.S.C. § 103(a) as unpatentable over Takano in view of Uno et al. (U.S. Patent No. 6,406,196, hereinafter “Uno”).

In response, new Claims 15-27 are presented. New independent Claim 15 includes features of original independent Claim 1, original Claims 2 and 9, and features directed to a bond that is used to fix a waveguide in a groove. In addition, new Claim 15 has been redrafted to better comply with U.S. claim drafting practice. The features of new Claim 15 find non-limiting support in Applicants’ disclosure as originally filed, for example with respect to Figs. 1A, 1B, 2A, and 2B, and in the specification starting at p. 12, l. 4. No new matter has been added. Dependent Claims 16-26 are at least supported by the original claims, and are also rewritten to better comply with U.S. claim drafting practice, and to delete the improper multiple claim dependency.

Furthermore, the title of the invention is amended to correct a minor formality and to be better directed to the claimed invention. No new matter has been added.

In response to the rejections of Claims 1-6 under 35 U.S.C. §§ 102(e) and 103(a), Applicants respectfully request reconsideration of these rejections and traverse the rejections, as discussed next.

Briefly summarizing, new Claim 15 is directed to an optical module. The optical module includes, *inter alia*: an optical component having a upper and lower surface, including a waveguide holding groove located in the upper surface of the optical component; and an optical waveguide that is optically coupled with the optical component, the optical waveguide fixed to the optical component by a bond material that is arranged between an outer lateral surface of the waveguide and sidewalls of the waveguide holding groove.

Furthermore, the waveguide holding groove has substantially a circular cross-sectional shape, and the waveguide holding groove is located in the optical component in a way to form a groove opening on the upper surface of the optical component, the groove opening formed by an intersection of the sidewalls of the groove with the upper surface of the optical component. In addition, a width of the groove opening on the upper surface of the optical component is narrower than a diameter of the optical waveguide located in the waveguide holding groove, and a diameter of the optical waveguide is narrower than a diameter of the circular cross-sectional shape of the waveguide holding groove.

Turning now to the applied references, Takano describes a method for coupling optical fibers with a fiber coupler 10. (Takano, Abstract, Figs. 1-2.) Takano describes that the lower holder 1 of the coupler 10 has a V-shape groove 2. However, Takano clearly fails to teach at least the waveguide holding groove ***having substantially a circular cross-sectional shape*** is located in the optical component in a way to form a groove opening on the upper surface of the optical component, the groove opening formed by an intersection of the sidewalls of the groove with the upper surface of the optical component, as required by Applicants' Claim 15. A V-shaped groove 2 used for the positioning of fibers 9, as shown by Takano, ***is not*** a waveguide holding groove having a circular cross-sectional shape, as recited in Applicants' Claim 15. In addition, Takano is also silent on the features related to the width of the groove opening on the upper surface of the optical component is ***narrower than a***

diameter of the optical waveguide located in said waveguide holding groove, as further required by Claim 15.

Therefore, Takano fails to teach or suggest every feature recited in independent Claim 15, so that Claims 15-27 are believed to be patentably distinct over Takano. Accordingly, Applicants respectfully traverse, and request reconsideration of the rejection based on Takano.¹

The cited passages of the reference Uno, used by the pending Office Action to form a 35 U.S.C. § 103(a) rejection of the dependent claims, fail to remedy the deficiencies of Takano, even if we assume that such combination is proper.

Uno is directed to an optical device including a substrate, at least one first groove formed on the substrate, an optical fiber placed in the first groove. (Uno, Abstract, Fig. 1A, 23A, and 29A.) As shown in Uno's Figures, the fibers are placed into v-shaped grooves or rectangular shaped grooves. (Id.) Uno explains that an optical fiber 2 is placed in the V-groove 3, and a parallel groove 4 is formed on the upper surface of the glass substrate 1 so as to diagonally traverse the optical fiber 2 with respect to its optical axis. (Uno, col. 11, ll. 25-46.) But the cited passages of Uno are also silent on both a waveguide holding groove having a circular cross-sectional shape, and the features related to the width of the groove opening on the upper surface of the optical component that is ***narrower than a diameter of the optical waveguide*** located in said waveguide holding groove, as required by Claim 15.

Therefore, even if the combination of Takano and Uno is assumed to be proper, the cited passages of the combination fails to teach every element of independent Claim 15. Specifically, the cited passages of the combination fail to teach the features of the waveguide

¹ See MPEP 2131: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference," (Citations omitted) (emphasis added). See also MPEP 2143.03: "All words in a claim must be considered in judging the patentability of that claim against the prior art."

holding groove. Accordingly, Applicants respectfully traverse, and request reconsideration of this rejection based on Takano and Uno.²

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 15-27 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representative at the below listed telephone number.


Respectfully submitted,

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² See MPEP 2142 stating, as one of the three "basic criteria [that] must be met" in order to establish a *prima facie* case of obviousness, that "the prior art reference (or references when combined) must teach or suggest all the claim limitations," (emphasis added). See also MPEP 2143.03: "All words in a claim must be considered in judging the patentability of that claim against the prior art."